

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Please cancel claims 1-62.

Please add new claims 63-76 as follows:

STATUS OF CLAIMS

Claims 1-62 **(canceled)**

Claim 63 **(new)** A method for identifying a modulator of binding between a DmGPCR and an allostatin, comprising the steps of:

- (a) contacting an allostatin and a composition comprising a DmGPCR in the presence and in the absence of a putative modulator compound;
- (b) detecting binding between the allostatin and the DmGPCR; and
- (c) determining whether binding in the presence of said putative modulator is increased or decreased compared to binding in the absence of said putative modulator compound, whereby putative modulator compounds that increase or decrease binding are identified as binding modulators;

wherein the DmGPCR is DmGPCR4 having a sequence with at least 90% sequence homology to SEQ ID NO:8.

Claim 64 **(new)** The method of claim 63 wherein the allostatin is a peptide having a sequence selected from the group consisting of SEQ ID NO:34, SEQ ID NO:35, SEQ ID NO:36, SEQ ID NO:37 and SEQ ID NO:165.

Claim 65 **(new)** The method of claim 63 wherein the allostatin is a peptide having a sequence of SEQ ID NO:34.

Claim 66 **(new)** The method of claim 63 wherein the allostatin is a peptide having a sequence of SEQ ID NO:35.

Claim 67 **(new)** The method of claim 63 wherein the allostatin is a peptide having a sequence of SEQ ID NO:36.

Claim 68 **(new)** The method of claim 63 wherein the allostatin is a peptide having a sequence of SEQ ID NO:37.

Claim 69 **(new)** The method of claim 63 wherein the allostatin is a peptide having a sequence of SEQ ID NO:165.

Claim 70 **(new)** The method of claim 63 wherein the DmGPCR4 has a sequence with at least 95% sequence homology to SEQ ID NO:8.

Claim 71 **(new)** The method of claim 63 wherein the DmGPCR4 has a sequence with at least 99% sequence homology to SEQ ID NO:8.

Claim 72 **(new)** The method of claim 63 wherein the DmGPCR4 has the sequence of SEQ ID NO:8.

Claim 73 **(new)** The method of claim 63 wherein modulation of binding is determined by a gel-shift assay.

Claim 74 **(new)** The method of claim 63 wherein modulation of binding is determined by a protein binding assay.

Claim 75 **(new)** The method of claim 63 further comprising characterizing one or more properties of the binding modulator.

Claim 76. **(new)** The method of claim 75 wherein the one or more properties of the binding modulator are physical, biological or biochemical properties.